

Testimony of
Tom Levy
General Manager-Chief Engineer
Coachella Valley Water District
Coachella, California
before the
Committee on Resources
Subcommittee on Water and Power
U.S. House of Representatives
meeting at
Cerritos Center for Performing Arts
Cerritos, California
Monday, June 18, 2001

Introduction and background

My name is Tom Levy. I am general manager-chief engineer of the Coachella Valley Water District.

The Coachella Valley Water District provides a variety of water-related services throughout a 1,000-square-mile service area in the southeastern California desert. It is primarily located in that portion of Riverside County commonly referred to as the greater Palm Springs area but it also provides domestic water service and sanitation in a portion of Imperial County along the Salton Sea and its boundaries extend into a small part of San Diego County.

The district was founded under the County Water District Act of the State of California in 1918. It acquired regional flood control responsibilities when it absorbed the Coachella Valley Stormwater District in the late 1930s. In addition to storm water protection, the district provides irrigation water from the Colorado River to about 70,000 acres of farmland. It provides domestic water to nearly 83,000 homes and businesses in the cities and communities of Cathedral City, Rancho Mirage, Palm Desert, Indian Wells, La Quinta, Thermal, Mecca, Oasis, Desert Shores, Salton City, North Shore, Bombay Beach and surrounding areas. Wastewater collected from nearly 72,000 sanitation hookups flows to six reclamation plants where most is converted to high quality water for reuse for golf course and greenbelt irrigation. The district also operates groundwater recharge facilities for much of Coachella Valley.

While all of Southern California is a desert, with an average annual rainfall of only about 12 inches on the coastal

plain, Coachella Valley is especially arid with only about 3 inches of precipitation annually. There are no major rivers flowing through the area so most of Southern California's water supply must be imported from great distances - the eastern Sierra, Northern California and the Colorado River. Coachella Valley Water District has contracted to receive water from both Northern California and the Colorado River.

All domestic water the district delivers is pumped from a large groundwater basin, also in a state of overdraft. It currently is replenished by natural flows of snowmelt from surrounding mountains and by imported water from the Colorado River through a contract with the Bureau of Reclamation and from the California State Water Project.

Supply, quality & reliability challenges

Colorado River

Supply: California's Colorado River supply is limited by the U.S. Supreme Court and by the California Limitation Act to 4.4 million acre-feet per year. Accompanying charts show the division of the river's waters between the states and between agencies within California. Still, during the last 10 years the state has used more than 5 million acre-feet annually. The loss of 600,000 to 800,000 acre-feet of water annually to Southern California when California is limited by "normal" Colorado River flows carries with it significant adverse economic impacts unless enough time is granted to implement essential reductions in use and development of alternative sources.

Colorado River Water Distribution

Average annual flow 13.8 million acre feet

Basin divisions

Upper basin states* 7.5 million acre feet

Lower basin states** 75 million acre feet

Lower basin (if available) 1 million acre feet

Mexico 1.5 million acre feet

Evaporation & other losses 1 million acre feet

Total basic divisions 18.5 million acre feet

Lower basin state allotments

California 4.4 million acre feet

Arizona 2.8 million acre feet

Nevada 300,000 acre feet

Priorities within California

1. To irrigate 104,500 acres In Palo Verde 3.85
2. To irrigate 25,000 acres in Yuma Project million
- 3a. Imperial Irrigation & Coachella Valley acre feet
- 3b. To irrigate 16,000 more acres in Palo Verde total
4. Metropolitan Water District of S. California 550,000 acre feet
- 5a. Metropolitan Water District 500,000 acre feet

4.4 million acre-feet basic entitlement

- 6b. City & County of San Diego 112,000 acre feet
 - 6a. Imperial Irrigation & Coachella Valley 300,000 acre feet
 - 6b. To irrigate 16,000 more acres in Palo Verde total
- Total divisions within California 5.362 million acre feet

**Wyoming, Utah, Colorado & New Mexico **California, Nevada & Arizona*

Now that Arizona has developed uses for its full entitlement, excess water for California is a luxury of the past. Realizing this, and with prodding from the other basin states and the Secretary of the Interior, California and its Colorado River water purveyors have been working for several years on a plan to ultimately reduce the state's demand on the river to its basic entitlement. While negotiations continue to resolve individual agency supply concerns, enough progress had been made by the beginning of this year to earn the Secretary of the Interior's concurrence on Interim Supply Guidelines which allow the state 15 years to orderly reduce its demand on the river to its basic entitlement. These guidelines are conditional on the Quantification Settlement Agreement being operational by Dec. 31, 2002. Arizona and Metropolitan Water District of Southern California have worked out an agreement where that state would allow California surplus supplies in exchange for Metropolitan protecting Arizona from shortage impacts. Currently, progress is being made concerning environmental impact documents for the Quantification Settlement Agreement.

All seven Colorado River Basin states support implementation of the California Plan to significantly reduce

the state's Colorado River consumption. Unless water transfers pursuant to the Quantification Settlement Agreement begin in 2002 urban Southern California could lose up to 750,000 acre-feet per year of Colorado River water, resulting in a water crisis with severe economic impacts. To meet this schedule, all environmental compliance actions must first be secured. This requires congressional action because the Fish and Wildlife Service is unable to grant necessary permits before mitigation is authorized and funded.

Without legislative action this year, the Quantification Settlement Agreement, Colorado River surplus guidelines, the seven state commitments and the ability of California to meet its obligations to stay within its Colorado River allocation would all be negated.

The sought legislation would also authorize development of off-stream water management reservoirs near the All-American Canal to enhance off-stream storage capability, would enhance the ability of Mexico to make efficient use of its Colorado River entitlement and would assist the development of a reliable water supply for the San Luis Rey Indian Water Rights Settlement.

Quality: Historically, the Colorado River carries a heavy salt load - salt that leaches into the river naturally and salt that is added as water diverted for irrigation is returned to the river for downstream uses. By the time Coachella Valley Water District receives Colorado River water through the All-American Canal system, nearly a ton of salt is delivered with each acre-foot of water. Coping with this salt is costly both in terms of money and additional water consumed.

Salinity damage from Colorado River water in the United States typically range between \$500 million and \$750 million per year according to Bureau of Reclamation figures. High salinity levels make it difficult to grow fruits and winter vegetables and salt destroys domestic water pipelines and fixtures. Studies show that salinity damage could exceed \$1.5 billion annually if future increases are not controlled. Several control projects have been completed since the 1974 Colorado River Basin Salinity Control Act, Public Law 93-320, was adopted. Projects currently under development include the Paradox Valley, Grand Valley and Las Vegas Wash Units. Cost of salinity control generally ranges from \$20 to \$100 per ton while a conservative analysis of benefit is estimated to be \$340 per ton.

Traces of perchlorate, an industrial byproduct leaching into Lake Mead from the Las Vegas Valley area, have been detected in Colorado River water entering the Coachella Valley.

And then, of course, there is the time bomb of the pile of uranium tailings sitting near the river's bank in Moab, Utah, with radioactive materials leaching into the water daily.

Reliability: From the standpoint of having excellent storage facilities in Lakes Powell and Mead, the Colorado River has been extremely reliable to carry its users through extended droughts because of 60 million acre-feet of on-river storage. That reliability is at risk.

The threat to reliability comes from two sources, both caused by environmental concerns.

Before dams were placed on the river to store water for droughts and to protect whole regions from devastating flooding the river flowed freely to the Gulf of California. Today, there is a strong environmental movement to return a portion of that historic flow to the gulf.

At the same time, the water conservation necessary to reduce California's demand on the river requires that the inflow to the Salton Sea be reduced. Unless the environmental consequences of the reduced inflow are

addressed, California's Quantification Settlement Agreement is threatened.

The Salton Sea was created shortly after the turn of the century when man accidentally diverted the entire flow of the Colorado River into the Salton Sink for two years. It has been maintained since by Colorado River water diverted to irrigate the Imperial and Coachella Valleys in California and the Mexicali Valley in Mexico.

Today the sea is a primary resting place for migratory birds, including some endangered species.

With a surface elevation nearly 220 feet below sea level, the only way water leaves the Salton Sea is through evaporation which leaves the salts behind making today's sea saltier than ocean water. There has been much work done locally and in Washington toward saving the Salton Sea but this must remain a separate issue. Habitat such as wetlands adjacent to the sea can be created to address the endangered species needs resulting from Colorado River water conservation and transfer programs which will reduce inflow to the sea.

Attempts to increase flows to the Colorado River Delta in Mexico for environmental enhancement also threaten the reliability of the river's water supply in the United States. Environmentalists claim only a "small" amount of water, about 100,000 acre-feet is needed for habitat enhancement in the delta. This is one-third of Nevada's annual entitlement. Mexico currently receives at least 1.5 million acre-feet of Colorado River water annually plus any surplus flows. So far, all of it has been diverted at Morales Dam in Mexico to irrigate farmland.

Any delta enhancement activity must be done creatively to assure that it doesn't contribute to shortages in California and to assure that it benefits delta habitat.

State Water Project

Quantity: The State Water Project was oversold and under-built. Even in a normal year, the State Department of Water Resources cannot meet commitments to its contractors. In a dry year it is incapable of producing half of the water it promised. This year it provides 35 percent of its commitments. Solutions are needed to move water through or around the Sacramento-San Joaquin Delta. The State of California needs to honor its 1960s commitment to finish the project. This requires an aggressive environmental restoration program coupled with storage and facilities to move water around the delta.

Quality: State Project water requires the removal of many contaminants before it can be used for domestic purposes. Many of these are picked up as the water flows through the maze of delta waterways on its way to the beginning of the California Aqueduct.

Reliability: Without adequate storage and a cross-delta transfer facility, the State Water Project helps meet Southern California's water needs but, even in a normal year, it can't be called reliable. Global warming will reduce the reliability of the State Water Project and destroy many of the environmental benefits that are to be provided through CALFED. It needs to be considered in developing alternatives.

Local agencies have been forced to develop programs to increase their reliability. This has shifted the responsibility from the State Water Project to the local agencies and requires more state and federal funding to assist them.

Local water agencies have worked to improve its reliability through development of innovative conjunctive use programs. For example, for more than 25 years the Coachella Valley Water District and Metropolitan Water District of Southern California have had an exchange agreement which improves water reliability to both.

Coachella Valley lies many miles from the end of the State Water Project but Metropolitan Water District's Colorado River Aqueduct passes through the valley. Coachella Valley exchanges its share of State Water Project water with Metropolitan for a like amount of Colorado River water which flows into percolation basins for groundwater recharge. To make the system even more flexible, Coachella takes water only during wet years when Metropolitan banks excess flows in the groundwater basin which Coachella draws upon during dry years when both state project and Colorado River entitlements go to Metropolitan. As part of the Colorado River Key Terms, both agencies are working on a 100,000 acre-foot wet year transfer that will improve reliability and reduce costs.

Both state project and Colorado River water supplies are extended through these types of conjunctive use programs.

Groundwater

Quantity: The amount of groundwater available to Southern California varies with the individual basins and sub basins. I will limit my remarks to the groundwater basin of Coachella Valley which, fortunately, is among the best in Southern California from the standpoint of large storage capacity.

Still, it is in a state of overdraft and must be constantly replenished to provide stability and reduce the potential for ground subsidence and water quality problems.

The groundwater supply is large enough to sustain our water users through an extended drought if necessary.

Because rainfall is so scarce in Coachella Valley, professional water users (farmers and golf course managers) have recognized water as a major cost of doing business and have become world leaders in the development of micro-irrigation, computerized delivery systems and other water conservation techniques now used in many arid areas.

Replenishment assessment fees are charged to major groundwater pumpers so they pay their proportionate share of the cost of replacing extracted water. Nearly all the water that we can reclaim from sewage is redistributed for golf course and greenbelt irrigation, further reducing demands on the groundwater supply.

Quality: Generally, the quality of Coachella Valley's groundwater is very good but planned and proposed state and federal regulations can make that water very expensive for the consumer, probably without improving its healthfulness. Desert area groundwater often contains naturally occurring constituents such as radon, arsenic and chromium 6 at low levels but above levels proposed by some.

We believe it is vital to deliver healthful water to urban users and recognize the necessity for the costs those users must bear for healthful water. However, we do not believe it is appropriate to increase the costs of providing them with water without sound science to indicate that the additional money they are forced to spend will make their drinking water more healthful. Coachella Valley Water District had contributed significantly to funding of scientific research in these areas and has actively encouraged other agencies to do the same. Concurrently, we also are investing in studies to determine cost-effective ways of removing

constituents that may be found to be harmful. The head of our water quality section is one of 16 people currently sitting on an EPA subcommittee studying costs of arsenic removal.

We all agree that the current arsenic standard probably is too high but scientific studies to determine an appropriate level are still incomplete. If the level is set at 10 parts per billion, the annualized costs to Coachella Valley Water users will be about \$2 million. Unfortunately, this will be assessed from a small amount of users in rural areas because our wells in large population centers are relatively arsenic-free.

Radon is a totally different story. Exposure to radon gas escaping from well water is very small compared to total amounts in ambient air. Still, Coachella Valley water users would be expected to pay as much as \$8.3 million annually to meet requirements which have an almost non-existent health benefit.

Fortunately, the federal EPA has stayed away from the chromium 6 debate but some California legislators at both the state and federal levels are pushing for standards without the benefit of science.

All current studies indicate that chromium 6 is not a carcinogen when ingested. In fact, it is rapidly converted to chromium 3, an element important to body functions, when ingested or exposed to organic matter. Because domestic well water generally is protected from organic contamination, chromium 6 - as a percentage of total chromium - appears higher in groundwater than surface supplies. Very little is known about removal of chromium 6 but preliminary numbers indicate the cost per year in Coachella Valley could be in the \$15 million range.

Another concern facing all of California is the adverse effects of MTBE on the state's ground and surface water supplies. This has not yet become a problem in Coachella Valley but it is only a matter of time.

Reliability: The short- to mid-term reliability of the Coachella Valley groundwater basin is excellent and the district is currently in the public review stages of a valley-wide water management plan which will extend its reliability for decades.

The plan requires implementation of a variety of conservation, conjunctive use, importation and reclamation activities designed to reduce use without damaging the valley's lifestyle or joint economic bases of tourism and agriculture.

It involves more use of Colorado River water to reduce the demand on the groundwater basin and increased availability of state project water for exchange to increase the availability of water for groundwater recharge. These issues are closely tied to current negotiations concerning the Colorado River Quantification Settlement Agreement.

Measures and assistance needed

Colorado River

Probably the most important issue facing Southern California water users that requires federal participation is the Colorado River Quantification Settlement Agreement. To go forward, we need congressional help in the form of \$60 million for enhancement programs to protect endangered species habitat around the sea and direction to accept and implement a habitat conservation plan for Imperial Valley and the Salton Sea.

Restoration of the Salton Sea is an issue that Congress and the California legislature need to address. However, the schedule for this important action is behind the implementation of the Quantification Settlement Agreement and

should not result in failure of the Quantification Settlement Agreement and the resulting devastating economic impacts on California.

An urgent short-term need is for the removal of the uranium tailings from the riverbank near Moab, Utah.

An important long-term project is continued investment in desalting research. There is nearly one ton of salt in every acre-foot of Colorado River water delivered to Coachella Valley farms. The economic costs of such a salt load delivered throughout Southern California is tremendous.

We also need assistance in resolving the Mexican Colorado River delta issue with creative programs that reach environmental goals without the sacrifice of needed water supplies in the United States.

State Water Project

Concerning state waters, we need the CALFED process to work. Both state and federal officials must continue to work toward improving the water supply for most of the state by fixing the delta to improve both quality and quantity of water for the south.

With the population of California growing, additional water supplies, including the benefits from storage, must be part of the solution.

Conservation

Grant and loan programs to implement conservation and reliability enhancement programs -- including water banking, conjunctive use, desalting brackish water and recycling -- would help Southern California get through future droughts. An example of such is Coachella Valley's Martinez Canyon Recharge program. Here, a groundwater recharge facility, similar to the one the district has operated for many years for urban users, will be constructed in the agricultural portion of the valley to receive water through the Coachella Branch of the All-American Canal. When completed, it will help rebuild a declining groundwater basin during normal years along the Colorado but, during years of shortage, farmers could ease up on their Colorado River demands and rely, instead, on a freshly recharged groundwater basin.

Quality

We need to make sure water quality issues are based on good science and, when good science determines that expenditures must be made beyond the ability of users to pay, federal subsidies should be available to make up the difference instead of granting waivers to small service areas. If the water is found to be unhealthful, it is unhealthful to small populations as well as large populations.

Concluding remarks

Thank you for traveling to California to hear our concerns about the state's water future. We look forward to working closely with you to address some of these recommendations and concerns.

If you desire additional information about Coachella Valley Water District or some of the issues I have mentioned here we would welcome a visit to our web site: www.cvwd.org

####